

What is claimed:

1. A monolithically formed one-piece, low profile, reflective pavement marker comprising:  
a substantially hollowed structural body with two parts, each of said parts having an arcuate top surface, one inclined planar face with multiple reflective cells, said reflective cells are formed in two rows, each of said cells is integrally includes an inside cell like area open within hollow cavity air gaps immediately beneath said reflective cells, said each part further includes two arcuate sides with abrupt vertical ends, a backside with the open ends of one row of said hollow cavity air gaps, and a planar base surface that includes an extended portion beyond the front and side peripheries of said part, said base surface also includes the open ends of the second row of said hollow cavity air gaps, said reflective cells can have either rectangular, hexagonal or rhomboid, said pavement marker can be formed from a high impact resistant polymeric material, said pavement marker can be injection molded in one transparent color or in two stage color process;  
element means for retro-reflection integrally protruding from said inside surfaces of said reflective cells within said hollow cavity air gaps, said element means provide a plurality of cube-corner reflective elements on said designated inside cell like areas, thereby facilitate retro-reflectivity of light from oncoming vehicles, said cube corner reflective elements can be of various micro cube sizes or the standard size commonly used, said two parts integrally connected with thin ties and having at least one beaded backside for sonic welding said two parts; and  
interior wall means for structural support disposed rearwardly starting at the periphery of the designated reflective cell like areas and about .05 to .10 inch bellow the exterior of said inclined planar reflective face,

thereby defining said hollow cavity air gaps beneath said cube corner reflective elements, providing structural support for the low profile reflective pavement marker and providing the ejection space needed during injection molding process used for fabricating said marker, said hollow cavity air gaps each having a centerline that forms an angle of about 50 to 90 degrees with respect to the corresponding planar base surface of said part, said hollow cavity air gaps separated from each other by said wall means.

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4. A monolithically formed one-piece reflective pavement marker comprising:

a substantially hollowed structural body, said marker body having a spherical top surface, two recessed sides with near vertical grip areas, a planar base surface with textured discontinuous grooves, said spherical top surface includes multiple reflective cells, some of said reflective cells integrally having planar inclined outside surfaces, said reflective cells having planar inside surfaces open within hollow cavity air gaps immediately beneath said reflective cells, said reflective cells can have either rectangular, hexagonal, or rhomboid shapes, said spherical top surface integrally includes multiple, parallel raised ridges, said pavement marker can be fabricated from high impact resistant polymeric material, said inside surfaces of reflective cells integrally include multiple cube-corner reflective elements, said cube corner reflective elements protruding freely within said hollow cavity air gaps, thereby providing the means to facilitate retro reflectivity of light from oncoming vehicles, said cube corner reflective elements can be of the micro cube sizes or the standard sizes; and

interior wall means for structural support disposed rearwardly starting at the periphery of said designated reflective cell like areas and about .05 to .15 inch bellow the exterior, spherical top surface, thereby defining said hollow cavity air gaps beneath said cube corner reflective elements, and providing the ejection space needed during injection molding process used for said pavement marker, said hollow cavity air gaps each having a centerline that forms an angle of about 50 to 90 degrees with respect to the corresponding planar base surface of said structural body.

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7. A method of forming a reflective pavement marker monolithically including multiple of cube corner reflective elements comprising the steps of:
- a) providing tooling means which allow an injection molding of said reflective pavement marker integrally including the cube corner reflective elements, said tooling means can mold said pavement marker in one stage or two stage color injection molding cycle;
  - b) providing the load carrying interior walls an angular means defining multiple hollow cavity air gaps which allow integrally forming the cube corner reflective elements within designated planar interior cells, said cube corner reflective elements protruding freely inside said hollow cavity air gaps in said pavement marker, said hollow cavity air gaps having centerlines inclined about 50 to 90 degrees with respect to the planar base surface of said pavement marker; and

c) provide the means for applying an abrasion resistant hard coat to said pavement marker outside surface utilizing either plasma enhanced chemical vapor deposition method, ion beam sputtering or reactive sputtering methods to coat hard, abrasion resistance, carbon film, silicon dioxide, or aluminum oxide film, said coating means can utilize any hybrid process in chemical vapor deposition chamber, such as, radio frequency plasma decomposition from a gas, such as normal butane or other gases, said plasma can be excited using an electromagnetic alternating fields, said coating means can also utilize ion beam sputtering process which can provide one or two stage gradual coating, said coating can have an adhesive enhancing buffer coat on the pavement marker surface followed hard carbon coat thereafter.

whereby said reflective pavement marker will be monolithically formed including said cube corner reflective elements with abrasion resistant carbon coated exterior surface.